STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION

JOHN ELIAS BALDACCI
GOVERNOR

DAWN R. GALLAGHER
COMMISSIONER

October 12, 2005

Limerick Sewerage District
P.O. Box 309
Limerick, ME 04048

Attn: Mr. Russell Nutting, Trustee
Mr. Ronald Taylor, Plant Operator

RE: Maine Pollutant Discharge Elimination System (MEPDES) Permit #ME0100871
Maine Waste Discharge License (WDL) Application #W000860-5L-D-R
Final Permit/License

Dear Mr. Nutting and Mr. Taylor:

Enclosed, please find a copy of your **final** MEPDES permit and Maine WDL which was approved by the Department of Environmental Protection. Please read the permit/license and its attached conditions carefully. You must follow the conditions in the order to satisfy the requirements of law. Any discharge not receiving adequate treatment is in violation of State law and is subject to enforcement action.

Any interested person aggrieved by a Department determination made pursuant to applicable regulations, may appeal the decision following the procedures described in the attached DEP FACT SHEET entitled "*Appealing a Commissioner's Licensing Decision.*"

We would like to make you aware of the fact that your monthly Discharge Monitoring Reports (DMRs) may not reflect the revisions in this permitting action for several months however, you are required to report applicable test results for parameters required by this MEPDES permit/WDL that do not appear on the DMR. Please see attached April 2003 O&M Newsletter article regarding this matter.

If you have any questions regarding the matter, please feel free to call me at 287-7659.

Sincerely,

Bill Hinkel
Division of Water Resource Regulation
Bureau of Land and Water Quality

Enc. cc: Stuart Rose, DEP [redacted]

AUGUSTA
17 STATE HOUSE STATION
AUGUSTA, MAINE 04333-0017
(207) 287-7688
RAY BLDG., HOSPITAL ST.

BANGOR
106 HOGAN ROAD
BANGOR, MAINE 04401
(207) 941-4570 FAX: (207) 941-4584

PORTLAND
312 CANCO ROAD
PORTLAND, MAINE 04103
(207) 822-6300 FAX: (207) 822-6303

PRESQUE ISLE
1235 CENTRAL DRIVE, SKYWAY PARK
PRESQUE ISLE, MAINE 04769-2094
(207) 764-0477 FAX: (207) 764-1507

web site: www.state.me.us/dep

DMR Lag

When the Department renews discharge permits, the parameter limits may change or parameters may be added or deleted. In some cases, it is merely the replacement of the federally issued NPDES permit with a state-issued MEPDES permit that results in different limits. When the new permit is finalized, a copy of the permit is passed to our data entry staff for coding into EPA's Permits Compliance System (PCS) database. PCS was developed in the 1970's and is not user-friendly. Entering or changing parameters can take weeks or even months.

This can create a lag between the time your new permit becomes effective and the new permit limits appearing on your DMRs. If you are faced with this, it can create three different situations that have to be dealt with in different ways.

1. If the parameter was included on previous DMRs, but only the limit was changed, there will be a space for the data. Please go ahead and enter it. When the changes are made to PCS, the program will have the data and compare it to the new limit.

2. When a parameter is eliminated from monitoring in your new permit, but there is a delay in changing the DMR, you will have a space on the DMR that needs to be filled. For a parameter that has been eliminated, please enter the space on the DMR for that parameter only with "NODI-9" (No Discharge Indicator Code #9). This code means monitoring is conditional or not required this monitoring period.

3. When your new permit includes parameters for which monitoring was not previously required, and coding has not caught up on the DMRs, there will not be any space on the DMR identified for those parameters. In that case, please fill out an extra sheet of paper with the facility name and permit number, along with all of the information normally required for each parameter (parameter code, data, frequency of analysis, sample type, and number of exceedances). Each data point should be identified as monthly average, weekly average, daily max, etc. and the units of measurement such as mg/L or lb/day. Staple the extra sheet to the DMR so that the extra data stays with the DMR form. Our data entry staff cannot enter the data for the new parameters until the PCS coding catches up. When the PCS coding does catch up, our data entry staff will have the data right at hand to do the entry without having to take the extra time to seek it from your inspector or from you.

   EPA is planning significant improvements for the PCS system that will be implemented in the next few years. These improvements should allow us to issue modified permits and DMRs concurrently. Until then we appreciate your assistance and patience in this effort.

Phil Garwood

STATE OF MAINE
DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE HOUSE STATION 17 AUGUSTA, MAINE 04333

DEPARTMENT ORDER

IN THE MATTER OF

LIMERICK SEWERAGE DISTRICT	) MAINE POLLUTANT DISCHARGE
PUBLICLY OWNED TREATMENT WORKS	) ELIMINATION SYSTEM PERMIT
LIMERICK, YORK COUNTY	) AND
#ME0100871	) WASTE DISCHARGE LICENSE
#W000860-5L-D-R **APPROVAL**	) **RENEWAL**

Pursuant to the provisions of the Federal Water Pollution Control Act, Title 33 USC, §1251, *et seq.*, and Maine law, 38 M.R.S.A., §414-A, *et seq.*, and applicable regulations, the Department of Environmental Protection (Department) has considered the application of the LIMERICK SEWERAGE DISTRICT (District), with its supportive data, agency review comments, and other related materials on file and FINDS THE FOLLOWING FACTS:

APPLICATION SUMMARY

The District has applied to the Department for renewal of Waste Discharge License (WDL) #W000860-5L-C-R, which was issued on January 31, 2001 and is scheduled to expire on January 31, 2006. The 1/31/01 WDL authorized the monthly average discharge of up to 0.11 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW) to Little Ossipee River, Class B, in Limerick, Maine.

On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) permit program, and permit #ME0100871 (same as NPDES number) will be utilized as the primary reference number for the District's discharge.

PERMIT SUMMARY

This permitting action is similar to the 1/31/01 licensing action in that it is:

1. Carrying forward the monthly average discharge flow limit of 0.11 MGD and the daily maximum discharge flow reporting requirement;

2. Carrying forward the monthly average, weekly average and daily maximum technology-based concentration and mass limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS);

3. Carrying forward the daily maximum technology-based concentration limit for settleable solids;

4. Carrying forward the seasonal monthly average and daily maximum concentration limits for *Escherichia coli* bacteria;

5. Carrying forward the monthly average technology-based and daily maximum water quality-based concentration limits for total residual chlorine (TRC);

6. Carrying forward the monthly average and daily maximum water quality-based concentration and mass limits for total copper;

7. Carrying forward the monthly average water quality-based concentration and mass limits for total lead;

8. Carrying forward the monthly average concentration and mass reporting requirements for total phosphorus during June 1 through September 30 of each year;

9. Carrying forward surveillance and screening level whole effluent toxicity (WET) and chemical-specific testing requirements;

10. Carrying forward the annual lagoon sludge depth reporting requirement, but revising the reported value from the maximum depth to the average depth;

11. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except total copper, total lead and total phosphorus; and

12. Carrying forward the "grab" sample type for BOD_5, TSS, total copper, total lead and total phosphorus through March 31, 2006.

PERMIT SUMMARY (cont'd)

This permitting action is different from the 1/31/01 licensing action in that it is:

1. Establishing a requirement for a minimum of 85% removal of BOD_5 and TSS;

2. Revising the pH range limit from 6.0 to 8.5 standard units (SU) to 6.0 to 9.0 SU;

3. Revising the acute brook trout limit from 10% to 10.6% for mathematical accuracy;

4. Establishing a chronic brook trout limit of 1.7% and revising the surveillance level minimum monitoring frequency requirement from once per year to twice per year based on the results of facility testing;

5. Eliminating the chronic water flea limit of 1.7% and revising the surveillance level minimum monitoring frequency requirement for said species from twice per year to once per year based on the results of facility testing;

6. Establishing daily maximum concentration and mass reporting requirements for total phosphorus and a minimum monitoring frequency requirement of twice per month during June 1 through September 30 of each year;

7. Establishing daily maximum and monthly average concentration and mass reporting requirements for orthophosphate and a minimum monitoring frequency requirement of twice per month during June 1 through September 30 of each year;

8. Establishing a requirement to submit, for Department review and approval, a toxicity reduction evaluation (TRE) plan for total copper and brook trout;

9. Requiring one additional WET test for the water flea to be completed during calendar year 2005 to fulfill requirements established by the previous licensing action;

10. Requiring the submission of a revised Wet Weather Management Plan for Department review and comment;

11. Revising the minimum monitoring frequency requirements for total copper, total lead, and total phosphorus; and

12. Revising the sample type for BOD_5, TSS, total copper, total lead and total phosphorus from "grab" to "24-hour composite" beginning on April 1, 2006 and lasting through permit expiration.

CONCLUSIONS

BASED on the findings in the attached Fact Sheet dated October 10, 2005, and subject to the Conditions listed below, the Department makes the following conclusions:

1. The discharge, either by itself or in combination with other discharges, will not lower the quality of any classified body of water below such classification.

2. The discharge, either by itself or in combination with other discharges, will not lower the quality of any unclassified body of water below the classification which the Department expects to adopt in accordance with state law.

3. The provisions of the State's antidegradation policy, 38 M.R.S.A. §464(4)(F), will be met, in that:

   (a) Existing in-stream water uses and the level of water quality necessary to protect and maintain those existing uses will be maintained and protected;

   (b) Where high quality waters of the State constitute an outstanding national resource, that water quality will be maintained and protected;

   (c) The standards of classification of the receiving water body are met or, where the standards of classification of the receiving water body are not met, the discharge will not cause or contribute to the failure of the water body to meet the standards of classification;

   (d) Where the actual quality of any classified receiving water body exceeds the minimum standards of the next highest classification that higher water quality will be maintained and protected; and

   (e) Where a discharge will result in lowering the existing water quality of any water body, the Department has made the finding, following opportunity for public participation, that this action is necessary to achieve important economic or social benefits to the State.

4. The discharge will be subject to effluent limitations that require application of best practicable treatment as defined in Maine law, 38 M.R.S.A., §414-A(1)(D).

ACTION

THEREFORE, the Department APPROVES the above noted application of the LIMERICK SEWERAGE DISTRICT to discharge a monthly average flow of up to 0.11 MGD of secondary treated sanitary wastewater to Little Ossipee River, Class B, in Limerick, Maine, SUBJECT TO THE ATTACHED CONDITIONS, and all applicable standards and regulations including:

1. "Maine Pollutant Discharge Elimination System Permit Standard Conditions Applicable To All Permits," revised July 1, 2002, copy attached.

2. The attached Special Conditions, including any effluent limitations and monitoring requirements.

3. The expiration date of this permit is five (5) years from the date of signature below.

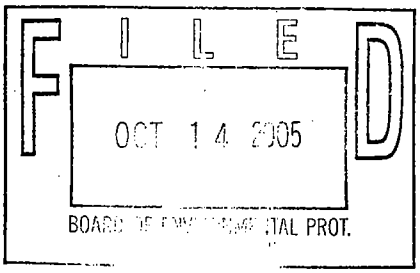
DONE AND DATED AT AUGUSTA, MAINE, THIS 12TH DAY OF OCTOBER, 2005.

DEPARTMENT OF ENVIRONMENTAL PROTECTION

BY: _____
DAWN R. GALLAGHER, Commissioner

PLEASE NOTE ATTACHED SHEET FOR GUIDANCE ON APPEAL PROCEDURES

Date of initial receipt of application: April 11, 2005
Date of application acceptance: April 21, 2005



Date filed with Board of Environmental Protection: _____.

This Order prepared by William F. Hinkel, BUREAU OF LAND & WATER QUALITY
#ME0100871 / #W000860-5L-D-R October 10, 2005

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

1. During the period beginning the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge **secondary treated sanitary wastewater from Outfall #001A** to Little Ossipee River. Such discharges shall be limited and monitored by the permittee as specified below[1]:

Effluent Characteristic	Discharge Limitations						Minimum Monitoring Requirements	
	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Monthly Average as specified	Weekly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Flow *[50050]*	0.11 MGD *[03]*	---	Report MGD *[03]*	---	---	---	Continuous *[99/99]*	Recorder *[RC]*
BOD_5 *[00310]*	28 lbs./day *[26]*	41 lbs./day *[26]*	46 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite[3] *[24]*
BOD_5 Percent Removal[2] *[81010]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
TSS[2] *[00530]*	28 lbs./day *[26]*	41 lbs./day *[26]*	46 lbs./day *[26]*	30 mg/L *[19]*	45 mg/L *[19]*	50 mg/L *[19]*	1/Week *[01/07]*	24-Hour Composite[3] *[24]*
TSS Percent Removal[2] *[81011]*	---	---	---	85% *[23]*	---	---	1/Month *[01/30]*	Calculate *[CA]*
Settleable Solids *[00545]*	---	---	---	---	---	0.3 ml/L *[25]*	1/Day *[01/01]*	Grab *[GR]*
***E. coli* Bacteria**[4] *[31633]*	---	---	---	64/100 ml[5] *[13]*	---	427/100 ml *[13]*	1/Week *[01/07]*	Grab *[GR]*
Total Residual Chlorine[6] *[50060]*	---	---	---	0.1 mg/L *[19]*	---	0.2 mg/L *[19]*	1/Day *[01/01]*	Grab *[GR]*
pH *[00400]*	---	---	---	---	---	6.0 – 9.0 SU *[12]*	1/Day *[01/01]*	Grab *[GR]*

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

FOOTNOTES: See Pages 10 through 12 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS

2. During the period beginning the effective date of this permit and lasting through permit expiration, the permittee is authorized to discharge **secondary treated sanitary wastewater from Outfall #001A** to Little Ossipee River. Such discharges shall be limited and monitored by the permittee as specified below[1]:

Effluent Characteristic	Discharge Limitations				Minimum Monitoring Requirements	
	Monthly Average as specified	Daily Maximum as specified	Monthly Average as specified	Daily Maximum as specified	Measurement Frequency as specified	Sample Type as specified
Total Copper[7] • **Through 9/30/06** • **10/1/06 through expiration** *[01042]*	0.16 lbs./day *[26]*	0.034 lbs./day *[26]*	265 µg/L *[28]*	55 µg/L *[28]*	1/Month*[01/30]* 1/Quarter *[01/90]*	24-Hour Composite[3] *[24]*
Total Lead *[01051]*	0.022 lbs./day *[26]*	---	36 µg/L *[28]*	---	1/Quarter *[01/90]*	24-Hour Composite[3] *[24]*
Total Phosphorus (as P) [8] **(June 1 – Sept. 30)** *[00665]*	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	2/Month *[02/30]*	24-Hour Composite[3] *[24]*
Orthophosphate (as P) [9] **(June 1 – Sept. 30)** *[04175]*	Report lbs./day *[26]*	Report lbs./day *[26]*	Report mg/L *[19]*	Report mg/L *[19]*	2/Month *[02/30]*	24-Hour Composite[3] *[24]*
Average Lagoon Sludge Depth[10] *[00068]*	Report Feet *[27]*	---	---	---	1/Year *[01/YR]*	Measured *[MS]*

The italicized numeric values bracketed in the table and in subsequent text are code numbers that Department personnel utilize to code the monthly Discharge Monitoring Reports.

FOOTNOTES: See Pages 10 through 12 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

3. **During the remainder of calendar year 2005**, the permittee shall conduct whole effluent toxicity (WET) testing for **Outfall #001A** as follows:

CALENDAR YEAR 2005 TESTING – To complete screening level testing established in the previous waste discharge license. Applies for the remainder of calendar year 2005 only.

Whole Effluent Toxicity (WET) [11]	Daily Maximum	Minimum Frequency	Sample Type
Acute No Observed Effect Level (A-NOEL) Invertebrate - **Water Flea** (*Ceriodaphnia dubia*) *[TDA3B]*	Report % *[23]*	1/Year *[01/YR]*	24-Hour Composite *[24]*
Chronic No Observed Effect Level (C-NOEL) Invertebrate - **Water Flea** (*Ceriodaphnia dubia*) *[TBP3B]*	Report % *[23]*	1/Year *[01/YR]*	24-Hour Composite *[24]*

FOOTNOTES: See Pages 10 through 12 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

4. During the effective term of this permit, the permittee shall conduct whole effluent toxicity (WET) and chemical-specific testing for **Outfall #001A** as follows:

SURVEILLANCE LEVEL TESTING - Beginning calendar year 2006 and lasting through 12 months prior to permit expiration.

Whole Effluent Toxicity (WET) [11]	Daily Maximum	Minimum Frequency	Sample Type
Acute No Observed Effect Level (A-NOEL)			
Invertebrate - **Water Flea** (*Ceriodaphnia dubia*) *[TDA3B]*	Report % *[23]*	1/Year *[01/YR]*	24-Hour Composite *[24]*
Vertebrate - **Brook Trout** (*Salvelinus fontinalis*) *[TDA6F]*	**10.6 %** *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Chronic No Observed Effect Level (C-NOEL)			
Invertebrate - **Water Flea** (*Ceriodaphnia dubia*) *[TBP3B]*	Report % *[23]*	1/Year *[01/YR]*	24-Hour Composite *[24]*
Vertebrate - **Brook Trout** (*Salvelinus fontinalis*) *[TDA6F]*	**1.7 %** *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Chemical-Specific (Priority Pollutants, PP) [12] *[50008]*	Report µg/L *[28]*	1/Year *[01/YR]*	Composite/Grab *[24/GR]*

SCREENING LEVEL TESTING - Beginning 12 months prior to permit expiration and lasting through permit expiration.

Whole Effluent Toxicity (WET) [11]	Daily Maximum	Minimum Frequency	Sample Type
Acute No Observed Effect Level (A-NOEL)			
Invertebrate - **Water Flea** (*Ceriodaphnia dubia*) *[TDA3B]*	Report % *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Vertebrate - **Brook Trout** (*Salvelinus fontinalis*) *[TDA6F]*	**10.6 %** *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Vertebrate - **Fathead Minnow** (*Pimephales promelas*) *[TDA6C]*	Report % *[23]*	1/Year *[01/YR]*	24-Hour Composite *[24]*
Chronic No Observed Effect Level (C-NOEL)			
Invertebrate - **Water Flea** (*Ceriodaphnia dubia*) *[TBP3B]*	Report % *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Vertebrate - **Brook Trout** (*Salvelinus fontinalis*) *[TBQ6F]*	**1.7 %** *[23]*	2/Year *[02/YR]*	24-Hour Composite *[24]*
Vertebrate - **Fathead Minnow** (*Pimephales promelas*) *[TBP6C]*	Report % *[23]*	1/Year *[01/YR]*	24-Hour Composite *[24]*
Chemical-Specific (Priority Pollutants, PP) [12] *[50008]*	Report µg/L *[28]*	1/Year *[01/YR]*	Composite/Grab *[24/GR]*

FOOTNOTES: See Pages 10 through 12 of this permit for applicable footnotes.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

1. **Monitoring – All influent monitoring shall be conducted from the Main Pump Station,** or other sampling location specified by the Department. **All effluent monitoring shall be conducted at a location following the last treatment unit in the treatment process as to be representative of end-of-pipe effluent characteristics. Effluent sampling shall be conducted from the outlet side of the effluent pump,** or other sampling location specified by the Department. Any change in sampling location must be approved by the Department in writing. Sampling and analysis must be conducted in accordance with: a) methods approved by 40 Code of Federal Regulations (CFR) Part 136; b) alternative methods approved by the Department in accordance with the procedures in 40 CFR Part 136; or c) as otherwise specified by the Department. Samples that are sent out for analysis shall be analyzed by a laboratory certified by the State of Maine's Department of Human Services.

2. **Percent Removal** – The treatment facility shall maintain a minimum of 85 percent removal of both biochemical oxygen demand and total suspended solids for all flows receiving secondary treatment. Compliance with the limitation is based on a twelve-month rolling average. Calendar monthly average percent removal values shall be calculated based on influent and effluent concentrations. The twelve-month rolling average calculation is based on the most recent twelve-month period when the influent concentrations are greater than or equal to 200 mg/L.

3. **BOD_5, TSS, Copper, Lead and Phosphorus Sample Type** – Beginning the effective date of this permit and lasting though March 31, 2006, the effluent sample type shall be a "grab" sample. Beginning on April 1, 2006 and lasting through permit expiration, the effluent sample type shall be a "24-hour composite" sample.

4. **Seasonal Limits** – *E. coli* bacteria limits and monitoring requirements are seasonal and apply between May 15 and September 30 of each year. The Department reserves the right to impose year-round bacteria limits to protect the health, safety and welfare of the public.

5. **Bacteria Reporting** – The monthly average *E. coli* bacteria limitation is a geometric mean limitation and sample results shall be reported as such.

6. **TRC Monitoring** – Due to the contact time provided by the outfall structure, samples collected for TRC analysis shall be drawn from the outlet side of the effluent pump and allowed to rest uncovered for a period of no longer than 30 minutes before analyzing the sample for TRC.

   Monitoring for TRC is only required when elemental chlorine or chlorine-based compounds are in use for effluent disinfection. For instances when a facility has not disinfected with chlorine-based compounds for an entire reporting period, the facility shall report "NODI-9" for this parameter on the monthly DMR.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

7. **Total Copper Monitoring Frequency – Beginning upon issuance of this permit and lasting through September 30, 2006**, the permittee shall monitor total copper at a minimum frequency of once per month in conjunction with a toxicity reduction evaluation (TRE). **Beginning October 1, 2006 and lasting through permit expiration**, the permittee shall conduct total copper monitoring at a minimum frequency of once per calendar quarter.

8. **Total Phosphorus** – Total phosphorus monitoring shall be performed in accordance with Attachment A of this permit, *Protocol For Total P Sample Collection and Analysis*.

9. **Orthophosphate** – Orthophosphate monitoring shall be performed in accordance with Attachment B of this permit, *Protocol For Orthophosphate Sample Collection and Analysis*.

10. **Sludge Depth Reporting** – Average lagoon sludge depth shall be reported to the nearest tenth of a foot. In determining the average depth, the permittee shall establish an evenly distributed grid pattern that consists of 9 cells (3 wide by 3 deep) over each lagoon. The permittee shall record one measurement from each grid cell and report the average of all measurements for each lagoon.

11. **WET** – Definitive WET testing is a multi-concentration testing event (a minimum of five dilutions set at levels to bracket the modified acute and chronic critical water quality thresholds of 10.6% and 1.7%, respectively), which provides a point estimate of toxicity in terms of No Observed Effect Level, commonly referred to as NOEL or NOEC. A-NOEL is defined as the acute no observed effect level with survival as the end point. C-NOEL is defined as the chronic no observed effect level with survival, reproduction and growth as the end points.

    For the duration of calendar year 2005, the permittee shall conduct one (1) additional WET test on the water flea (*Ceriodaphnia dubia*) to fulfill testing requirements established in the previous waste discharge license. Results shall be reported to the Department within 30 days of the permittee receiving the test results from the laboratory conducting the testing. Invalid or problematic test results shall be identified in the submittal.

    Beginning calendar year 2006 and lasting through 12 months prior permit expiration, the permittee shall initiate surveillance level WET testing at a frequency of once per year on the water flea (*Ceriodaphnia dubia*) and twice per year on the brook trout (*Salvelinus fontinalis*). Tests shall be conducted such that such that results are available for all four calendar quarters at the completion of surveillance level testing. Results shall be reported to the Department within 30 days of the permittee receiving the test results from the laboratory conducting the testing. Invalid or problematic test results shall be identified in the submittal.

SPECIAL CONDITIONS

A. EFFLUENT LIMITATIONS AND MONITORING REQUIREMENTS (cont'd)

FOOTNOTES:

Beginning twelve months prior to the expiration date of the permit, the permittee shall initiate screening level WET tests at a frequency of twice per year for the water flea and brook trout and once per year for the fathead minnow (*Pimephales promelas)*. Results shall be reported to the Department within 30 days of the permittee receiving the test results from the laboratory conducting the testing. Invalid or problematic test results shall be identified in the submittal.

Toxicity tests must be conducted by an experienced laboratory approved by the Department. The laboratory must follow procedures as described in the following U.S.E.P.A. methods manuals.

a. Short Term Methods for Estimating the Chronic Toxicity of Effluent and Receiving Water to Freshwater Organisms, Fourth Edition, October 2002, EPA-821-R-02-013.

b. Methods for Measuring the Acute Toxicity of Effluent and Receiving Waters to Freshwater and Marine Organisms, Fifth Edition, October 2002, EPA-821-R-02-012.

The permittee is also required to analyze the effluent for the parameters specified in the analytic chemistry on the form in Attachment C of this permit every time a WET test is performed for compliance with this permit.

12. **Priority Pollutants** (chemical-specific testing under Department rule Chapter 530.5) are those listed by the USEPA pursuant to Section 307(a) of the Clean Water Act and published a 40 CFR Part 122, Appendix D, Tables II and III.

Beginning upon issuance of the permit and lasting through permit expiration, the permittee shall initiate surveillance and screening level chemical-specific testing at a minimum frequency of once per year (1/Year). Testing shall be conducted such that results are available for all calendar quarters at the completion of surveillance level testing.

Chemical-specific testing shall be conducted on samples collected at the same time as those collected for whole effluent toxicity tests, when applicable. Chemical-specific testing shall be conducted using methods that permit detection of a pollutant at existing levels in the effluent or that achieve minimum reporting levels of detection as specified by the Department. Results shall be submitted to the Department within thirty (30) days of the permittee receiving the data report from the laboratory conducting the testing. **For the purposes of Discharge Monitoring Report (DMR) reporting, enter a "1" for *yes, testing done this monitoring period* or "NODI-9" *monitoring not required this period.***

All mercury sampling shall be conducted in accordance with EPA's "clean sampling techniques" found in USEPA Method 1669, Sampling Ambient Water For Trace Metals At EPA Water Quality Criteria Levels. All mercury analysis shall be conducted in accordance with USEPA Method 1631, Determination of Mercury in Water by Oxidation, Purge and Trap, and Cold Vapor Fluorescence Spectrometry.

SPECIAL CONDITIONS

B. NARRATIVE EFFLUENT LIMITATIONS

1. The effluent shall not contain a visible oil sheen, foam or floating solids at any time which would impair the usages designated by the classification of the receiving waters.

2. The effluent shall not contain materials in concentrations or combinations which are hazardous or toxic to aquatic life, or which would impair the usages designated by the classification of the receiving waters.

3. The discharges shall not cause visible discoloration or turbidity in the receiving waters which would impair the usages designated by the classification of the receiving waters.

4. Notwithstanding specific conditions of this permit the effluent must not lower the quality of any classified body of water below such classification, or lower the existing quality of any body of water if the existing quality is higher than the classification.

C. DISINFECTION

If chlorination is used as the means of disinfection, an approved chlorine contact tank providing the proper detention time consistent with good engineering practice must be utilized followed by a dechlorination system if the imposed total residual chlorine (TRC) limit cannot be achieved by dissipation in the detention tank. The TRC in the effluent shall at no time cause any demonstrable harm to aquatic life in the receiving waters. The dose of chlorine applied shall provide a TRC concentration that will effectively reduce *E. coli* bacteria levels to or below those specified in Special Condition A, "*Effluent Limitations and Monitoring Requirements*," of this permit.

D. TREATMENT PLANT OPERATOR

The treatment facility must be operated by a person holding a minimum of a **Grade II** certificate pursuant to Title 32 M.R.S.A. §4171, *et seq.* All proposed contracts for facility operation by any person must be approved by the Department before the permittee may engage the services of the contract operator.

E. LIMITATIONS FOR INDUSTRIAL USERS

Pollutants introduced into the wastewater collection and treatment system by a non-domestic source (user) shall not pass through or interfere with the operation of the treatment system.

SPECIAL CONDITIONS

F. MONITORING AND REPORTING

Monitoring results obtained during the previous month shall be summarized for each month and reported on separate Discharge Monitoring Report (DMR) forms provided by the Department and **postmarked on or before the thirteenth (13th) day of the month or hand-delivered to the Department's Regional Office such that the DMR's are received by the Department on or before the fifteenth (15th) day of the month** following the completed reporting period. A signed copy of the DMR and all other reports required herein shall be submitted to the following address:

Department of Environmental Protection
Southern Maine Regional Office
Bureau of Land and Water Quality
Division of Engineering, Compliance and Technical Assistance
312 Canco Road
Portland, Maine 04103

G. UNAUTHORIZED DISCHARGES

The permittee is authorized to discharge only in accordance with the terms and conditions of this permit and only from Outfall #001A. Discharges of wastewater from any other point source are not authorized under this permit, and shall be reported in accordance with Standard Condition B(5), *Bypasses,* of this permit.

H. NOTIFICATION REQUIREMENT

In accordance with Standard Condition D, the permittee shall notify the Department of the following.

1. Any introduction of pollutants into the wastewater collection and treatment system from an indirect discharger in a primary industrial category discharging process wastewater; and

2. Any substantial change (increase or decrease) in the volume or character of pollutants being introduced into the wastewater collection and treatment system by a source introducing pollutants into the system at the time of permit issuance. For the purposes of this section, notice regarding substantial change shall include information on:

   (a) the quality and quantity of wastewater introduced to the wastewater collection and treatment system; and

   (b) any anticipated impact caused by the change in the quantity or quality of the wastewater to be discharged from the treatment system.

SPECIAL CONDITIONS

I. WET WEATHER FLOW MANAGEMENT PLAN

The treatment facility staff shall develop and maintain a Wet Weather Management Plan to direct the staff on how to operate the facility effectively during periods of high flow. The Department acknowledges that the existing collection system may deliver flows in excess of the monthly average design capacity of the treatment plant during periods of high infiltration and rainfall.

On or before March 1, 2006, the permittee shall submit to the Department for review and approval, a new or revised Wet Weather Management Plan that conforms to Department guidelines for such plans ***[PCS Code 06799]***. The revised plan shall include operating procedures for a range of intensities, address solids handling procedures (including septic waste and other high strength wastes if applicable) and provide written operating and maintenance procedures during the events.

Once the Wet Weather Management Plan has been approved, the permittee shall review their plan annually and record any necessary changes to keep the plan up to date.

J. OPERATION & MAINTENANCE (O&M) PLAN

The permittee shall maintain a current written comprehensive Operation & Maintenance (O&M) Plan at the facility. The plan shall provide a systematic approach by which the permittee shall at all times, properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

By December 31 of each year, or within 90 days of any process changes or minor equipment upgrades, the permittee shall evaluate and modify the O&M Plan including site plan(s) and schematic(s) for the wastewater treatment facility to ensure that it is up-to-date. The O&M Plan shall be kept on-site at all times and made available to Department and USEPA personnel upon request.

Within 90 days of completion of new and or substantial upgrades of the wastewater treatment facility, the permittee shall submit the updated O&M Plan to their Department inspector for review and comment.

K. TOXICITY REDUCTION EVALUATION (TRE)

Within thirty (30) days of the effective date of this permit, the permittee shall submit to the Department, for review and approval, a TRE plan which outlines a strategy to identify the source(s) and action items to be implemented to mitigate or eliminate exceedence of ambient water quality criteria for total copper and for brook trout ***[PCS Code 02299]***.

SPECIAL CONDITIONS

L. REOPENING OF PERMIT FOR MODIFICATIONS

Upon evaluation of the tests results or monitoring requirements specified in Special Conditions of this permitting action, new site specific information, or any other pertinent test results or information obtained during the term of this permit, the Department may, at any time and with notice to the permittee, modify this permit to: (1) include effluent limits necessary to control specific pollutants or whole effluent toxicity where there is a reasonable potential that the effluent may cause water quality criteria to be exceeded; (2) require additional effluent or ambient water quality monitoring if results on file are inconclusive; or (3) change monitoring requirements or limitations based on new information.

M. SEVERABILITY

In the event that any provision, or part thereof, of this permit is declared to be unlawful by a reviewing court, the remainder of the permit shall remain in full force and effect, and shall be construed and enforced in all respects as if such unlawful provision, or part thereof, had been omitted, unless otherwise ordered by the court.

ATTACHMENT A

Attachment A

Protocol for Total P Sample Collection and Analysis

Approved Analytical Methods: EPA 365.2, SM 4500-P B.5 E

Sample Collection: The Maine DEP is requesting that total phosphorus analysis be conducted on composite effluent samples. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. If the sample is being sent to a commercial laboratory or analysis cannot be performed the day of collection then the sample must be preserved by the addition of 2 mls of concentrated H_2SO_4 per liter and refrigerated at 0-4 degrees C. The holding time for a preserved sample is 28 days

QA/QC: Run a distilled water blank and at least 2 standards with each series of samples. If standards do not agree within 2% of the true value then prepare a new calibration curve.

Every month run a blank on the composite jug and sample line. Automatically, draw distilled water into the sample jug using the sample collection line. Let this water set in the jug for 24 hours and then analyze for total phosphorus. Preserve this sample as described above.

April 2004

ATTACHMENT B

Attachment B

Protocol for Orthophosphate Sample Collection and Analysis

Approved Analytical Methods: EPA 365.2, SM 4500-P.E

Sample Collection: The Maine DEP is requesting that orthophosphate analysis be conducted on composite effluent samples. Facilities can use individual collection bottles or a single jug made out of glass or polyethylene. Bottles and/or jugs should be cleaned prior to each use with dilute HCL. This cleaning should be followed by several rinses with distilled water. The sampler hoses should be cleaned, as needed.

Sample Preservation: During compositing the sample must be at 0-4 degrees C. The sample must be filtered immediately (within 15 minutes) after collection using a pre-washed 0.45-um membrane filter. Be sure to follow one of the pre-washing procedures described in the approved methods. Also, be aware that you will likely want to use a separate suction hose and collection container for the orthophosphate filtering process. If the sample is being sent to a commercial laboratory or analysis cannot be performed within 2 hours after collection then the sample must be kept at 0-4 degrees C. There is a 48-hour holding time for this sample although analysis should be done sooner, if possible.

QA/QC: Same as described in Total P Protocol.

April 2004

ATTACHMENT C

FRESHWATER WHOLE EFFLUENT TOXICITY (WET) TEST REPORT

Facility _____ DEP License No. _____ NPDES permit No. _____

Contact person _____ Telephone No. _____

Date initially sampled _____ Date tested _____ Chlorinated? _____

mm/dd/yy

Test type screening _____ surveillance _____ Dechlorinated? _____

DEP/EPA

Results % effluent Test required by _____

	Water flea	Trout	Fathead
LC50			
A-NOEL			
C-NOEL			

Receiving Water Concentration

A-NOEL	
C-NOEL	

Data summary

	water flea			trout			fat head	
	% survival		no. young	% survival		final wt (mg)	% survival		final wt (mg)
QC standard	A>90	C>80	>15/female	A>90	C>80	>2% increase	A>89	C>79	>0.25
lab control									
river water control									
conc. 1 (%)									
conc. 2 (%)									
conc. 3 (%)									
conc. 4 (%)									
conc. 5 (%)									
conc. 6 (%)									
stat test used									

place * next to values statistically different from controls

for trout show final wt and % incr for both controls

Reference toxicant

	water flea		trout		fat head	
	LC50/A-NOEL	C-NOEL	LC50/A-NOEL	C-NOEL	LC50/A-NOEL	C-NOEL
toxicant / date						
limits (mg/l)						
results (mg/l)						

Comments _____

Laboratory Conducting Test. To the best of my knowledge this information is true, accurate, and complete.

signature _____ company _____

printed name _____ address _____

tel. no. _____

Report analytical chemistry on reverse side.

WETRPFMF.XLS

Mar 98

ANALYTICAL CHEMISTRY RESULTS
FRESHWATER TESTS

Date collected _____ mm/dd/yy

Date analyzed _____ mm/dd/yy

Lab ID No. _____

Analyte	Report Units	Results receiving water	Results effluent	Detection level	Method
Alkalinity	mg/L			mg/L	
Ammonia nitrogen	µg/L			µg/L	
Specific conductance	µmhos			µmhos	
Total residual chlorine	mg/L			mg/L	
Total organic carbon	mg/L			mg/L	
Total solids	mg/L			mg/L	
Total suspended solids	mg/L			mg/L	
Total aluminum	µg/L			µg/L	
Total cadmium	µg/L			µg/L	
Total calcium	mg/L			mg/L	
Total chromium	µg/L			µg/L	
Total copper	µg/L			µg/L	
Total hardness	mg/L			mg/L	
Total lead	µg/L			µg/L	
Total magnesium	µg/L			µg/L	
Total nickel	µg/L			µg/L	
Total zinc	µg/L			µg/L	
other (pH)	S.U.			S.U.	
other ( )					

Comments _____

Laboratory conducting test. To the best of my knowledge this information is true, accurate, and complete

signature _____ lab name _____

printed name _____ address _____

tel. no. _____

MAINE POLLUTANT DISCHARGE ELIMINATION SYSTEM PERMIT
AND
WASTE DISCHARGE LICENSE

FACT SHEET

Date: **OCTOBER 10, 2005**

MEPDES PERMIT: **#ME0100871**
WASTE DISCHARGE LICENSE: **#W000860-5L-D-R**

NAME AND ADDRESS OF APPLICANT:

LIMERICK SEWERAGE DISTRICT
P.O. BOX 309
LIMERICK, MAINE 04048

COUNTY: **YORK**

NAME AND ADDRESS WHERE DISCHARGE OCCURS:

LIMERICK SEWERAGE DISTRICT
316 BURNHAM ROAD
LIMERICK, MAINE 04048

RECEIVING WATER / CLASSIFICATION: **LITTLE OSSIPEE RIVER/CLASS B**

COGNIZANT OFFICIAL AND TELEPHONE NUMBER: **MR. RUSSELL NUTTING, TRUSTEE**
207-793-4401

MR. RONALD TAYLOR, OPERATOR
(207) 967-2245

1. APPLICATION SUMMARY

Application: The Limerick Sewerage District (District) has applied to the Department of Environmental Protection (Department) for renewal of Waste Discharge License (WDL) #W000860-5L-C-R, which was issued on January 31, 2001 and is scheduled to expire on January 31, 2006. The 1/31/01 WDL authorized the monthly average discharge of up to 0.11 million gallons per day (MGD) of secondary treated sanitary wastewater from a publicly owned treatment works (POTW) to Little Ossipee River, Class B, in Limerick, Maine.

2. PERMIT SUMMARY

a. Regulatory: On January 12, 2001, the Department received authorization from the U.S. Environmental Protection Agency (USEPA) to administer the National Pollutant Discharge Elimination System (NPDES) permit program in Maine, excluding areas of special interest to Maine Indian Tribes. On October 30, 2003, after consultation with the U.S. Department of Justice, the USEPA extended Maine's NPDES program delegation to all but tribally owned discharges. In those areas, the Department maintains the authority to issue WDLs pursuant to Maine law. The extent of Maine's delegated authority is under appeal at the time of this permitting action. From that point forward, the program has been referred to as the Maine Pollutant Discharge Elimination System (MEPDES) program and permit #ME0100871 (same as NPDES permit) will be utilized as the primary reference number for the Town's MEPDES permit.

b. Terms and Conditions: **This permitting action is similar to the 1/31/01 licensing action in that it is:**

1. Carrying forward the monthly average discharge flow limit of 0.11 MGD and the daily maximum discharge flow reporting requirement;

2. Carrying forward the monthly average, weekly average and daily maximum technology-based concentration and mass limits for biochemical oxygen demand (BOD_5) and total suspended solids (TSS);

3. Carrying forward the daily maximum technology-based concentration limit for settleable solids;

4. Carrying forward the seasonal monthly average and daily maximum concentration limits for *Escherichia coli* bacteria;

5. Carrying forward the monthly average technology-based and daily maximum water quality-based concentration limits for total residual chlorine (TRC);

6. Carrying forward the monthly average and daily maximum water quality-based concentration and mass limits for total copper;

7. Carrying forward the monthly average water quality-based concentration and mass limits for total lead;

8. Carrying forward the monthly average concentration and mass reporting requirements for total phosphorus during June 1 through September 30 of each year;

9. Carrying forward surveillance and screening level whole effluent toxicity (WET) and chemical-specific testing requirements;

10. Carrying forward the annual lagoon sludge depth reporting requirement, but revising the reported value from the maximum depth to the average depth;

PERMIT SUMMARY (cont'd)

11. Carrying forward the minimum monitoring frequency requirements for all monitored parameters, except total copper, total lead and total phosphorus; and

12. Carrying forward the "grab" sample type for BOD_5, TSS, total copper, total lead and total phosphorus through March 31, 2006.

This permitting action is different from the 1/31/01 licensing action in that it is:

1. Establishing a requirement for a minimum of 85% removal of BOD_5 and TSS;

2. Revising the pH range limit from 6.0 to 8.5 standard units (SU) to 6.0 to 9.0 SU;

3. Revising the acute brook trout limit from 10% to 10.6% for mathematical accuracy;

4. Establishing a chronic brook trout limit of 1.7% and revising the surveillance level minimum monitoring frequency requirement from once per year to twice per year based on the results of facility testing;

5. Eliminating the chronic water flea limit of 1.7% and revising the surveillance level minimum monitoring frequency requirement for said species from twice per year to once per year based on the results of facility testing;

6. Establishing daily maximum concentration and mass reporting requirements for total phosphorus and a minimum monitoring frequency requirement of twice per month during June 1 through September 30 of each year;

7. Establishing daily maximum and monthly average concentration and mass reporting requirements for orthophosphate and a minimum monitoring frequency requirement of twice per month during June 1 through September 30 of each year;

8. Establishing a requirement to submit, for Department review and approval, a toxicity reduction evaluation (TRE) plan for total copper and brook trout;

9. Requiring one additional WET test for the water flea to be completed during calendar year 2005 to fulfill requirements established by the previous licensing action;

10. Requiring the submission of a revised Wet Weather Management Plan for Department review and comment;

11. Revising the minimum monitoring frequency requirements for total copper, total lead, and total phosphorus; and

12. Revising the sample type for BOD_5, TSS, total copper, total lead and total phosphorus from "grab" to "24-hour composite" beginning on April 1, 2006 and lasting through permit expiration.

2. PERMIT SUMMARY (cont'd)

c. Facility History: This section provides a summary of significant licensing/permitting actions and milestones that have been completed for the Limerick Sewerage District.

December 10, 1985 – The USEPA issued NPDES permit #ME0100871 to the District for the monthly average discharge of up to 0.11 MGD of secondary treated wastewater to Little Ossipee River in Limerick. The 12/10/85 NPDES permit superseded the previous NPDES permit issued on June 17, 1977 and expired on December 10, 1990.

December 20, 1990 – The District applied for renewal of the 12/10/85 NPDES permit.

May 17, 1991 – By way of letter to the District, the USEPA administratively extended the terms and conditions of the 12/10/85 NPDES permit. As of August 2005, the USEPA had not otherwise acted on the District's application.

May 18, 1995 – The Department issued WDL #W000860-59-B-R to the District for the monthly average discharge of up to 0.11 MGD of secondary treated wastewater to Little Ossipee River in Limerick.

May 23, 2000 – Pursuant to Maine law, 38 M.R.S.A. §420 and §413 and Department rule, 06-096 CMR Chapter 519, *Interim Effluent Limitations and Controls for the Discharge of Mercury*, the Department issued a *Notice of Interim Limits for the Discharge of Mercury* to the permittee thereby administratively modifying WDL #W000860-59-B-R by establishing interim monthly average and daily maximum effluent concentration limits of 18.6 parts per trillion (ppt) and 27.8 ppt, respectively, and a minimum monitoring frequency requirement of 4 tests per year for mercury. It is noted that the mercury effluent limitations have not been incorporated into Special Condition A, *Effluent Limitations And Monitoring Requirements*, of this permit as the limits and monitoring frequencies are regulated separately through Maine law, 38 M.R.S.A. §420, §413 and Department rule Chapter 519. The interim mercury limits remain in effect and enforceable and modifications to the limits and/or monitoring frequencies will be formalized outside of this permitting document.

January 31, 2001 – The Department issued WDL #W000860-5L-C-R to the District for the monthly average discharge of up to 0.11 MGD of secondary treated wastewater to Little Ossipee River in Limerick. The 1/31/01 WDL superseded the 5/18/95 WDL and is scheduled to expire on January 31, 2006.

April 11, 2005 – The District submitted a General Application for renewal of WDL #W000860-5L-C-R. The application was accepted for processing on April 21, 2005 and was assigned WDL #W000860-5L-D-R/MEPDES Permit #ME0100871.

June 20, 2005 – The Maine Legislature amended the Maine Surface Water Classification Program at 38 M.R.S.A. §465, sub-§3 to revise the instantaneous level (daily maximum) *E. coli* bacteria limit from 427 colonies / 100 ml to 236 colonies / 100 ml.

2. PERMIT SUMMARY (cont'd)

d. Source Description: The Limerick Sewerage District owns and operates a wastewater treatment facility on Burnham Road in Limerick, Maine for the treatment of sanitary wastewater generated from a total of approximately 150 residential and commercial connections located within the District boundaries. There are no significant industrial users contributing flows to the treatment works and the District is not required to implement a formal pretreatment program. The sewer collection system is 100% separated (sanitary and storm water) and there are no combined sewer overflow (CSO) points associated with the system. The sanitary sewer collection system is approximately five miles in length and contains two (2) pump stations, both of which are equipped with emergency back-up power sources. The District has not applied to and is not authorized to accept septage wastes at the treatment facility.

A map showing the location of the treatment facility and the receiving water is included as Fact Sheet Attachment A.

e. Wastewater Treatment: The District commenced operation in 1985 and the facility currently provides a secondary level of wastewater treatment via two (2) 1.27 million gallon aerated lagoons operated in series. Each lagoon measures approximately 134 feet long by 116 feet wide and the operating depth varies based on lagoon and receiving water quality conditions as well as seasonal conditions. Each lagoon is fitted with a fine bubble diffused aeration system. The second lagoon cell is separated into two sections by a baffle.

Wastewater is conveyed from a grinder pump station located off Route 11 in Limerick to the main pump station located on Burnham Road via a 10-inch diameter gravity sewer. From there, the flow is conveyed in a 6-inch diameter force main to the facility headworks, which contains a grit removal unit and communitor. The facility is also equipped with a manually-cleaned bar rack to continue screening when the comminutor is off-line due to maintenance or mechanical failure. The District reported generating the equivalent of approximately 2-5 five-gallon buckets of grit per year, and that the current disposal method is subsurface burial in a shallow pit located on District-owned land. Department rule Chapter 400.1.Nnn defines "special waste" as:

> *"Special waste," means any solid waste generated by sources other than household and typical commercial establishments that exists in such an unusual quantity or in such a chemical or physical state, or any combination thereof, that may disrupt or impair effective waste management or threaten the public health, human safety or the environment and requires special handling, transportation and disposal procedures.*

This definition includes sludge and dewatered septage. Chapter 400.1.Ggg defines "sludge" as *"non-hazardous solid, semi-solid or liquid waste generated from a municipal, commercial or industrial wastewater treatment plant, water supply treatment plant, or wet process air pollution control facility or any other such waste having similar characteristics and effect."*

2. PERMIT SUMMARY (cont'd)

Maine law, 38 M.R.S.A.§1310-N states, *"No person may locate, establish, construct, expand the disposal capacity of or operate any solid waste facility unless approved by the department."* Thus, the grit screenings generated by the District are categorized as a special waste and must be disposed of at an appropriate waste facility licensed by the Department to receive special wastes. **Grit screenings may not be disposed of by subsurface burial on District-owned land**.

Influent flow is measured using an electromagnetic flow meter installed at the main pump station. The flow is then pumped to the first of two, geotextile lined treatment lagoons. The actual detention period of the lagoon system varies based on the management and operation of the lagoons. The management of lagoon levels varies based on seasonal conditions, lagoon water quality and receiving water flow conditions. Lagoon supernatant (effluent) is conveyed to an 8-foot long by 6-foot wide by 7-foot high (approximately 2,500-gallon) effluent wet well prior to disinfection. Effluent is pumped from the wet well and seasonally disinfected (in-line) using sodium hypochlorite. Effluent flow is measured using an electromagnetic flow meter and conveyed for discharge via a 2.85 mile long outfall pipe.

Due to the extended detention time provided by the outfall structure, as demonstrated through a Department-assisted dye study performed on May 21, 2001, the District is able to achieve compliance with the bacteria limits and water quality-based total residual chlorine limits without effluent dechlorination. Further discussion is included in Section 6(f) of this Fact Sheet.

Final effluent is discharged on an intermittent basis. As of August 2005, the District's discharge protocol was to operate the effluent pumps on a 24-hour basis when the lagoons reached filling capacity. The pumps are shut off when the lagoons are drawn down and several days may pass before the pumps are turned on and the discharge resumes. The District proposes to change this discharge protocol by placing the effluent pumps on a timer that activates the pumps one or more times per day to maintain a predetermined lagoon water level. This proposed discharge protocol would result in less effluent discharged during a 24-hour period than the current protocol.

Final effluent is conveyed from the treatment facility to Little Ossipee River for discharge via a 6-inch diameter, approximately 2.85-mile long outfall pipe that terminates on the shore of the river. The "bank outfall" is not fitted diffusers or other structures intended to enhance mixing with the receiving waters. The Department determined during the 2001 dye study that the discharge does not receive complete and rapid mixing with the receiving waters.

The District reports that no waste sludge has been removed from the lagoons since commencing operations in 1985. The reported design life for sludge removal is 10 to 20 years. The previous licensing action established an annual reporting requirement for sludge depth, however a review of the District's effluent reporting data on file in the permit compliance system (PCS) database indicates that no sludge monitoring results have been provided to the Department. This permitting action carries forward an annual reporting requirement for maximum lagoon sludge depth.

2. PERMIT SUMMARY (cont'd)

According to the District, the lagoon system was constructed with a lagoon under-drain collection system. The District further indicated that they are unaware of any means to sample or monitor the under-drain system.

A process flow schematic for the Limerick Sewerage District is included as Fact Sheet Attachment B.

3. CONDITIONS OF PERMIT

Maine law, 38 M.R.S.A. §414-A, requires that the effluent limitations prescribed for discharges, including, but not limited to, effluent toxicity, require application of best practicable treatment (BPT), be consistent with U.S. Clean Water Act, and ensure that the receiving waters attain the State water quality standards as described in Maine's Surface Water Classification System. In addition, Maine law, 38 M.R.S.A. §420, and Department rule Chapter 530.5, *Surface Water Toxics Control Program,* require the regulation of toxic substances at the levels set forth for Federal Water Quality Criteria as published by the U.S. Environmental Protection Agency pursuant to the Clean Waters Act.

4. RECEIVING WATER QUALITY STANDARDS

Maine law, 38 M.R.S.A. §467(12)(B) classifies tributaries of the Saco River, which includes Little Ossipee River at the point of discharge, as Class B waters. Maine law, 38 M.R.S.A. §465(3) describes the standards for Class B waters.

5. RECEIVING WATER QUALITY CONDITIONS

The *State of Maine 2004 Integrated Water Quality Monitoring and Assessment Report,* ("Report") prepared pursuant to Sections 303(d) and 305(b) of the Federal Water Pollution Control Act, lists a 10.0-mile reach of the Little Ossipee River from Lake Arrowhead Dam to its confluence with the Saco River (Hydrologic Unit Code ME106000210 / Waterbody ID #615R01) as, *"Category 5-A: Rivers and Streams Impaired by Pollutants Other Than Those Listed in 5-B Through 5-D (TMDL Required)."* Impairment in this context refers to the aquatic life and dissolved oxygen for Class B waters. The Report identifies non-point source pollution as a potential source for the impairment. The total maximum daily load (TMDL) scheduled to be completed in calendar year 2008 will identify significant sources contributing to the non-attainment status and will allocate wasteloads to the dischargers accordingly.

The District discharges to Little Ossipee River below Arrowhead Lake. In the summer of 2001, the Department sampled Little Ossippee River weekly in the vicinity of the District's discharge. There were numerous events when minimum Class B dissolved oxygen (DO) criteria of 7 parts per million (ppm) were not met both above and below the discharge point. As flow became lower in the middle to late summer, the diurnal swing of DO (p.m. DO – a.m. DO) grew larger and the daily minimum DO lower. This suggests that there is an issue of bottom attached algae that may be fed by nutrients from the District's discharge.

5. RECEIVING WATER QUALITY CONDITIONS (cont'd)

The data do not indicate that a large phosphorus spike occurs due to the discharge, as is evident in other water bodies with point source related nutrient issues. However, orthophosphate (ortho-P) can be rapidly uptaken in these situations. The Department's Division of Environmental Assessment (DEA) concludes that more data are needed to assess to what extent the District's discharge impacts DO levels in Little Ossipee River. The river segment involved is scheduled to have a TMDL completed by the year 2008.

The previous licensing action established a seasonal (June 1 through September 30) weekly monitoring requirement for total phosphorus to assist in evaluating the District's contribution of phosphorus loading to the receiving water. A review of facility effluent data on file with the Department indicates that the District has submitted phosphorus data for the reporting periods of 9/2001, 7/2002 and 8/2002 only. Further discussion and consideration of these data is included in Fact Sheet Section 6(g). The Department concludes that evaluation of three data points will not provide statistically significant results and that additional effluent phosphorus monitoring is necessary to evaluate the District's contribution of phosphorus loading to the receiving water. Hence, the Department has no information at this time that the discharge from the District causes or contributes to non-attainment of the standards of classification for Class B waters. The effluent limitations established in this permitting action represent best practicable treatment for secondary treated sanitary wastewater and represent the best information currently available to ensure that the District's discharge does not cause or contribute to non-attainment of the standards for Class B waters. Additional total phosphorus and orthophosphate effluent monitoring data, which is required by this permit, will be used by the Department in conjunction with a TMDL to establish appropriate effluent limitations necessary to protect receiving water quality.

In addition, the Report lists all freshwaters in Maine as "*Category 5-C: Waters Impaired by Atmospheric Deposition.*" Impairment in this context refers to the designated use of recreational fishing due to elevated levels of mercury in some fish caused by atmospheric deposition. As a result, the State has established a fish consumption advisory for all freshwaters in Maine. Pursuant to Maine law, 38 M.R.S.A. §420(1-B)(B), *"a facility is not in violation of the ambient criteria for mercury if the facility is in compliance with an interim discharge limit established by the Department pursuant to section 413 subsection 11."* The Department has established interim monthly average and daily maximum mercury concentration limits for this facility.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS

a. Flow: The previous licensing action established a monthly average discharge flow limitation of 0.11 MGD based on the design capacity of the treatment facility, a daily maximum discharge flow reporting requirement, and a "continuous" monitoring frequency and "recorder" sample type, which are all being carried forward in this permitting action.

b. Dilution Factors: The Department established applicable dilution factors for the discharge in accordance with freshwater protocols established in Department Rule Chapter 530.5, *Surface Water Toxics Control Program*, October 1994. With a monthly average discharge flow limit of 0.11 MGD, dilution factors associated with the discharge from the District may be calculated as follows:

Acute: 1Q10 = 5.8 cfs $\Rightarrow \frac{(5.8 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 35.1{:}1$

Modified Acute: ¼ 1Q10 = 1.45 cfs $\Rightarrow \frac{(1.45 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 9.5{:}1$

Chronic: 7Q10 = 9.9 cfs $\Rightarrow \frac{(9.9 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 59.2{:}1$

Harmonic Mean = 29.7 cfs $\Rightarrow \frac{(29.7 \text{ cfs})(0.6464) + 0.11 \text{ MGD}}{0.11 \text{ MGD}} = 175.5{:}1$

Department rule Chapter 530.5 states:

> *Analysis using numerical acute criteria for aquatic life must be based on ¼ of the 1Q10 stream design flow to prevent substantial acute toxicity within any mixing zone, according to EPA's Mixing Zone Policy and to ensure a Zone of Passage of at least ¾ of the cross-sectional area of any stream as required by Department rule. Where it can be demonstrated that a discharge achieves complete and rapid mixing with the receiving water, by way of an efficient diffuser or other effective method, analyses may use a greater proportion of the stream design flow, up to and including all of it, as long as the required Zone of Passage is maintained.*

The District's outfall pipe terminates on the shore of Little Ossipee River. In 2001, the Department and District performed a dye study of the discharge to observe the effluent plume as it enters the river. The study indicated that the discharge does not exhibit complete and rapid mixing with the receiving waters. Consequently the Department is utilizing the default stream flow of ¼ 1Q10 in acute evaluations, as was used in the previous licensing action, in accordance with Chapter 530.5.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

c. Biochemical Oxygen Demand (BOD_5) and Total Suspended Solids (TSS): The previous licensing action established monthly average and weekly average BOD_5 and TSS concentration limits of 30 mg/L and 45 mg/L, respectively, based on secondary treatment requirements of the Clean Water Act of 1977 §301(b)(1)(B) as defined in 40 CFR 133.102 and Department rule 06-096 CMR Chapter 525(3)(III), and daily maximum BOD_5 & TSS concentration limits of 50 mg/L based on a Department best professional judgement (BPJ) of best practicable treatment (BPT). All three concentration limits are being carried forward in this permitting action based on the secondary treatment requirements and Department BPJ as described above.

The previous licensing action established monthly average, weekly average and daily maximum BOD_5 and TSS mass limits of 28 lbs./day, 41 lbs./day and 46 lbs./day, respectively, based the monthly average discharge flow limit of 0.11 MGD and the applicable concentration limits, which are being carried forward in this permitting action and were derived as follows:

Monthly Average Mass Limit: (30 mg/L)(8.34 lbs./gallon)(0.11 MGD) = 28 lbs./day
Weekly Average Mass Limit: (45 mg/L)(8.34 lbs./day)(0.11 MGD) = 41 lbs./day
Daily Maximum Mass Limit: (50 mg/L)(8.34 lbs./day)(0.11 MGD) = 46 lbs./day

The previous licensing action established a minimum monitoring frequency requirement of once per week (1/Week) for BOD_5 and TSS, which is being carried forward in this permitting action and is based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD. This permitting action is carrying forward a "grab" sample type for BOD_5 and TSS through March 31, 2006 to provide the District with a reasonable opportunity to install the necessary sampling equipment to collect 24-hour composite samples for BOD_5 and TSS. The change in sample type is based on the results of a 2003 lagoon study, which concluded that there are significant differences between grab samples and 24-hour composite samples for BOD_5, and a Department best professional judgment determination that composite samples generate more representative and comparable results of effluent quality than do grab samples. Hence, beginning on April 1, 2006 and lasting through permit expiration, this permit requires the collection of "24-hour composite" samples for BOD_5 and TSS.

This permitting action is also establishing a new requirement for a minimum of 85% removal of BOD_5 & TSS pursuant to Department rule 06-096 CMR Chapter 525(3)(III)(a)(3) and (b)(3). Compliance with the limitation is based on a twelve-month rolling average. See Special Condition A, Footnote #2 for additional instruction on calculating the rolling average.

d. Settleable Solids: The previous licensing action established a daily maximum technology-based concentration limit of 0.3 ml/L for settleable solids, which is considered by the Department to be BPT for secondary treated sanitary wastewater, and which is being carried forward in this permitting action. This permitting action is carrying forward the minimum monitoring frequency requirement for settleable solids of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Escherichia coli bacteria: The previous licensing action established seasonal monthly average and daily maximum concentration limits for *E. coli* bacteria of 64 colonies/100 ml (geometric mean) and 427 colonies/100 ml (instantaneous level), respectively, based on the State of Maine Water Classification Program criteria for Class B waters found at 38 M.R.S.A. §465(4)(B), which are being carried forward in this permitting action. This permitting action is carrying forward the minimum monitoring frequency requirement of once per week (1/Week) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD. *E. coli* bacteria limits are seasonal and apply between May 15 and September 30 of each year, however, the Department reserves the right to impose year-round bacteria limits if necessary to protect the health, safety and welfare of the public.

e. Total Residual Chlorine (TRC): The previous licensing action established a daily maximum water quality-based concentration limit of 0.2 mg/L and a technology-based monthly average concentration limit of 0.1 mg/L and a minimum monitoring frequency requirement of once per day (1/Day) for TRC. Limitations on TRC are specified to ensure that ambient water quality standards are maintained and that BPT technology is being applied to the discharge. Department permitting actions impose the more stringent of either a water quality-based or BPT based limit. With dilution factors as determined above and current ambient water quality criteria (AWQC) for chlorine provided below, end-of-pipe water quality based concentration thresholds for TRC may be calculated as follows:

			Calculated	
Acute (A) Criterion	Chronic (C) Criterion	Mod. A & C Dilution Factors	Acute Threshold	Chronic Threshold
0.019 mg/L	0.011 mg/L	9.5:1 (Mod. A) 59.2:1 (C)	0.18 mg/L	0.65 mg/L

The Department has established a daily maximum BPT limitation of 1.0 mg/L for facilities that disinfect their effluent with elemental chlorine or chlorine-based compounds. For facilities subject to water quality-based limits, the Department has established daily maximum and monthly average BPT limits of 0.3 mg/L and 0.1 mg/L, respectively. The (rounded) calculated acute water quality-based threshold of 0.2 mg/L is more stringent than the technology-based BPT-based limit of 0.3 mg/L and is therefore being carried forward in this permitting action. The monthly average technology-based BPT-based limit of 0.1 mg/L is more stringent than the calculated chronic water quality-based threshold of 0.65 mg/L and is being carried forward in this permitting action. This permitting action is also carrying forward the minimum monitoring frequency requirement of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD, and in consideration of the District's TRC compliance record, which indicates several exceptions of these limitations.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

The previous licensing action established Special Condition H, Chlorination/Dechlorination, and required the District to implement a Department-approved chlorination/dechlorination program prior to May 15, 2001. On May 21, 2001, the Department's Division of Engineering, Compliance and Technical Assistance (DECTA) conducted a discharge dye study to determine the transit time in the effluent pipe between the treatment facility and the discharge point. The study was performed to determine the necessity of providing dechlorination of the effluent prior to discharge. DECTA determined that the transit time was 215 minutes and that this in-line detention time would result in little residual chlorine present in the wastewater as it is discharged into the receiving water. DECTA recommended that the facility not be required to install a dechlorination unit and recommended a sampling protocol that would allow the operator to draw a sample from the outlet side of the effluent pump and allow the sample to sit uncovered for a period of no longer than 30 minutes before analyzing the sample for TRC. The District reported that they allow the sample to sit uncovered for a period of 15 minutes prior to analysis.

TRC monitoring must be performed during any period in which chlorine-based compounds are in use for effluent disinfection. For instances when chlorine-based compounds are not in use for effluent disinfection for an entire reporting period, the facility shall report **"NODI-9"** for this parameter on the monthly Discharge Monitoring Report (DMR).

f. Total Phosphorus and Orthophosphate: The previous licensing action established seasonal monthly average concentration and mass reporting requirements for total phosphorus effective between June 1 and September 30 and a minimum monitoring frequency requirement of once per week. The monitoring requirement was established based on a Department best professional judgment determination that the discharge from the District could potentially increase the ambient phosphorus concentration of the receiving water. The license specified that the Department would review the effluent values following one year of testing to determine whether continued testing or establishment of numeric limits was appropriate. It is noted that the text on page 9 of 17 of the previous waste discharge license states that monitoring is required during the first year of the license only, which conflicts with Special Condition A, Footnote #4 on page 13 of 17 of the same license which states monitoring is required each year of the license. Thus, the monitoring requirement appears on the discharge monitoring reports for calendar years 2002, 2003, 2004 and 2005 in addition the first year of the license, calendar year 2001.

A review of the most recent 60 months of effluent data on file with the Department for this facility indicates effluent phosphorus data are available for the reporting periods of September 2001, July 2002 and August 2002 only (n = 3). The Department concludes that three data points are insufficient to accurately evaluate phosphorus loading from the District, and the Department did not formally eliminate the phosphorus monitoring requirement. The Department is scheduled to perform a total maximum daily load (TMDL) for Little Ossipee River in calendar year 2008. In order to evaluate the District's contribution to the non-attainment status of the receiving water, this permitting action is carrying forward monthly average, and is establishing daily maximum, concentration and mass reporting requirements for total phosphorus (PCS Code 00665). This permitting action is revising the minimum monitoring frequency requirement to twice per month (2/Month) based on a recommendation by the Department's Division of Environmental Assessment (DEA) in order to characterize the effluent. Monitoring

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

is required during the critical warm season of June 1 through September 30 of each year of the effective term of the permit.

In addition, this permitting action is establishing monthly average and daily maximum concentration and mass reporting requirements for orthophosphate and a minimum monitoring frequency requirement of twice per month (2/Month) during June 1 through September 30 of each year based on recommendations by the DEA.

This permitting action is carrying forward a "grab" sample type through March 31, 2006 to provide the District with a reasonable opportunity to install the necessary sampling equipment to collect 24-hour composite samples. Beginning on April 1, 2006 and lasting through permit expiration, this permit requires the collection of "24-hour composite" samples for phosphorus.

g. pH: The previous licensing action established a pH range limit of 6.0 – 8.5 standard units (SU), which was based on a Department BPJ of BPT for secondary treated wastewater at that time. Pursuant to a new Department rule found at Department rule, 06-096 CMR Chapter 525(3)(III)(c), this permitting action is revising the pH range limitation to 6.0 – 9.0 SU, which is now considered BPT for secondary treated wastewater. This permitting action is carrying forward the minimum monitoring frequency requirement for pH of once per day (1/Day) based on Department guidance for POTWs permitted to discharge between 0.1 and 0.5 MGD.

i. Whole Effluent Toxicity (WET) and Chemical-Specific Testing: Maine law, 38 M.R.S.A., §414-A and §420, prohibit the discharge of effluents containing substances in amounts that would cause the surface waters of the State to contain toxic substances above levels set forth in Federal Water Quality Criteria as established by the USEPA. Department rule, 06-096 CMR Chapter 530.5, *Surface Water Toxics Control Program*, set forth ambient water quality criteria (AWQC) for toxic pollutants and procedures necessary to control levels of toxic pollutants in surface waters.

WET and chemical-specific (priority pollutant) testing, as required by Chapter 530.5, is included in order to fully characterize the effluent. This permit also provides for reconsideration of effluent limits and monitoring schedules after evaluation of toxicity testing results. The monitoring schedule includes consideration of results currently on file, the nature of the wastewater, existing treatment and receiving water characteristics.

WET monitoring is required to assess and protect against impacts upon water quality and designated uses caused by the aggregate effect of the discharge on specific aquatic organisms. Acute and chronic WET tests are performed on invertebrate and vertebrate species. Chemical-specific, or "priority pollutant," testing is required to assess the levels of individual toxic pollutants in the discharge, comparing each pollutant to acute, chronic, and human health water quality criteria.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Chapter 530.5(B)(3) establishes criteria for three categories of WET and chemical-specific testing frequencies: high, medium and low. Based on these criteria, the District falls into the medium frequency WET testing category, as the facility has a chronic dilution factor greater than 20:1 but less than 100:1, and in the low frequency category for chemical-specific testing, as the facility does not meet the criteria established for the medium or low frequency categories.

Chapter 530.5(B)(6) specifies that medium frequency surveillance level WET testing (first four years of the permit) shall be performed at a minimum frequency of once per year and that screening level WET testing (final year of permit) shall be performed at a minimum frequency of twice per year. Chapter 530.5(B)(4) specifies the WET test organisms for facilities in the medium frequency category as water flea *(Ceriodaphnia dubia)* and brook trout *(Salvelinus fontinalis)* once each in surveillance level years and water flea twice, brook trout once and fathead minnow *(Pimephales promelas)* once in screening level years, which the previous licensing action established. The rule further specifies that low frequency chemical-specific surveillance and screening level testing shall be performed once per year, which the previous licensing action established.

WET Evaluation

Based on a statistical evaluation of the WET data on file with the Department at the time of the previous licensing action, the Department determined that the effluent exhibited a reasonable potential to exceed the critical chronic threshold of 1.7% (mathematical inverse of the chronic dilution factor expressed in percent) for the water flea and the critical acute threshold of 10% (mathematical inverse of the modified acute dilution factor expressed in percent) for the brook trout. It is noted that the mathematically correct chronic threshold is 10.6% and will be used for the remained of WET evaluations. Chapter 530.5(C)(2) states: *"where it is determined through this approach that a discharge contains pollutants at levels that have a reasonable potential to cause or contribute to an ambient excursion in excess of a numeric or narrative water quality criterion, appropriate water quality-based limits must be established in the license upon issuance."* Therefore, the previous licensing action established chronic and acute numeric limits for the water flea and brook trout, respectively. Additionally, the previous licensing action established an increased surveillance level monitoring requirement of twice per year (compared to the default frequency of 1/year) for the water flea.

Department rule Chapter 530.5 and Protocol E(1) of Department guidance entitled, *Maine Department of Environmental Protection, Toxicity Program Implementation Protocols*, dated July, 1998 (toxics protocol), states that statistical evaluations shall be periodically performed on the most recent 60 months of WET and chemical-specific data for a given facility to determine if water quality based limitations must be included in the permit.

A review of the data on file with the Department for the District indicates that the District has performed a total of seven (7) A-NOEL and C-NOEL tests on the water flea, five (5) A-NOEL and C-NOEL tests on the brook trout and one (1) A-NOEL and C-NOEL test on the fathead minnow for compliance with the previous license. The District reported to the Department that they have performed one additional test on the water flea and that results of this test will be

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

provided to the Department with the submission of the October 2005 discharge monitoring report. Thus, the District is required to perform one additional WET test using the water flea during the remainder of 2005 to fulfill the testing requirements established by the previous licensing action. See Attachment C of this Fact Sheet for a summary of the WET test results and dates. It is noted that the 2005 trout test result does not appear on the attached WET results data, however this test has been completed, did not result in an exceedence or RP to exceed the AWQC for trout and is in the process of being entered into the Department's database.

On October 6, 2005, the Department conducted a statistical evaluation on the aforementioned WET test results in accordance with the statistical approach outlined in the USEPA's March 1991 document entitled *Technical Support Document (TSD) for Water Quality Based Toxics Control*, Chapter 3.3.2 and the toxics protocol.

The 10/6/05 statistical evaluation indicates that the acute brook trout test result of 7.47% on March 22, 2004 exceeds the critical (modified) acute ambient water quality criteria (AWQC) threshold of 10.6% and the chronic trout test result of 2.8% on 3/22/04 has a reasonable potential (RP) to exceed the critical chronic AWQC threshold of 1.7%. The evaluation indicates that the discharge does not exceed or have RP to exceed the critical thresholds for any other species tested.

Chapter 530.5(C)(2) states, *"appropriate water quality based effluent limits must be established in the license if a discharge contains pollutants that are, or may be discharged at levels that cause, have a reasonable potential to cause, or contribute to an ambient excursion in excess of a numeric or narrative water quality criterion."* Therefore, with regard to WET testing, this permitting action is:

1) Carrying forward an acute brook trout limit, but revising the limit to 10.6%.

2) Establishing a chronic brook trout limit of 1.7%.

3) Revising the surveillance level minimum monitoring frequency requirement for brook trout from once per year to twice per year (2/Year) to provide additional data on which to characterize the effluent.

4) Eliminating the chronic water flea limit of 1.7%.

5) Revising the surveillance level minimum monitoring frequency requirement for water flea to the default frequency of once per year.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Further, Department rule 06-096 CMR Chapter 530.5(C)(3) states that if "*the discharge is causing an exceedence of applicable water quality criteria, then (1) the Department must notify the licensee of the exceedence; [and] (2) the licensee must submit a toxics reduction evaluation (TRE) plan for review and approval within 30 days of notice and implement the TRE after Department approval.*" Therefore, Special Condition K of this permit requires the District to submit a TRE plan within 30 days of the effective date of this permit, for Department review and approval, that addresses the exceedence of the acute threshold for brook trout.

This permitting action requires the District to perform one additional screening level WET test for the water flea during 2005 (see Special Condition A.3.).

Beginning calendar year 2006 and lasting through 12 months prior to permit expiration, the District is required to perform surveillance level WET testing as specified in Special Condition A.4 of this permit. Results of those tests will be evaluated upon submission by the District, and the Department will reopen this permit in accordance with Special Condition L to establish limits or revise monitoring frequencies for any parameter as necessary based on the Department's evaluation. Beginning 12 months prior to permit expiration and lasting through permit expiration, this permitting action requires the District to perform screening level WET testing as specified in Special Condition A.4 of this permit.

Chemical-Specific Evaluation

A review of the data on file with the Department for the District indicates that the District has performed a total of five (5) chemical-specific tests for the Department since 2001, which satisfies the requirements established by the previous licensing action. See Fact Sheet Attachment D for a summary of chemical-specific test dates.

Based on a statistical evaluation of the chemical-specific data on file with the Department at the time of the previous licensing action, the Department determined that the discharge exceeded the acute and chronic ambient water quality criteria (AWQC) for copper, and exhibited a reasonable potential to exceed the chronic AWQC for lead. As a result, the previous licensing action established monthly average and daily maximum concentration and mass limits for total copper and monthly average concentration and mass limits for total lead. The previous licensing action established a minimum monitoring frequency requirement of once per calendar quarter for copper and once per year for lead.

On October 6, 2005, the Department conducted a statistical evaluation on the aforementioned chemical-specific test results in accordance with the statistical approach outlined in the USEPA's March 1991 document entitled *Technical Support Document (TSD) for Water Quality Based Toxics Control*, Chapter 3.3.2 and the toxics protocol.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

The 10/6/05 statistical evaluation indicates that the discharge:

- **Exceeds the acute and chronic AWQC for copper.** [Six (6) of a total of 18 test results exceed the acute copper AWQC and one (1) of the 18 exceeds the chronic copper AWQC.]

- **Exhibits a reasonable potential to exceed (RP) the acute and chronic AWQC for copper.** [Fifteen (15) of a total of 18 test results demonstrate a reasonable potential to exceed (RP) the acute copper AWQC and five (5) of the 18 have RP for the chronic copper AWQC.]

- **Exhibits a reasonable potential to exceed the chronic AWQC for lead.** [Three (3) of a total of 15 test results demonstrate RP for the chronic AWQC for lead.]

- **Exhibits a reasonable potential to exceed the acute AWQC for zinc.** [One (1) of a total of 15 test results demonstrate RP for the modified acute AWQC for zinc.]

- **The discharge does not exceed or exhibit a reasonable potential to exceed the critical acute or chronic AWQC for any other of the parameters tested.** See Attachment D of this Fact Sheet for a summary of chemical-specific test dates and copper and lead test results.

Total Copper Evaluation. Acute and chronic mass-based loading limits for total copper, which are used to determine whether the discharge exceeds the AQWC, may be calculated as follows:

Mass Limit Formula = (permitted flow)(dilution factor)(AQWC)(conversion factor)

$$\text{Acute Copper Mass Limit} = \frac{(0.11\ \text{MGD})(9.5)(3.89\ \mu\text{g/L})(8.34\ \text{lbs./gallon})}{1{,}000\ \mu\text{g/mg}} = \mathbf{0.034\ lbs./day}$$

$$\text{Chronic Copper Mass Limit} = \frac{(0.11\ \text{MGD})(59.2)(2.99\ \mu\text{g/L})(8.34\ \text{lbs./gallon})}{1{,}000\ \mu\text{g/mg}} = \mathbf{0.16\ lbs./day}$$

It is noted that the acute and chronic copper mass limits have been correctly calculated above, in that the chronic limit is greater than the acute limit. This occurs when the acute and chronic AWQC are the same or nearly the same, as is the case with copper criteria for freshwater. The chronic dilution factor is greater than the acute dilution factor, thus the chronic mass value is greater than the acute mass value.

The following six (6) copper test results equate to mass loadings that exceed the acute mass-based copper loading limit of 0.034 lbs./day, and are considered exceedences of the acute AWQC for copper. In addition, the test result of 620.5 ppb from 10/14/02, which equates to a mass loading of 0.35 lbs./day, exceeds the chronic mass-based copper loading limit of 0.1624 lbs./day, and is considered an exceedence of the chronic AWQC for copper.

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Sample Date	Test Result, ppb	Mass Loading, lbs./day
3/30/01	72.0	0.0624
5/3/01	167.0	0.145
10/14/02	620.5	0.517
10/22/03	83.0	0.0401
11/12/03	68.0	0.0414
9/27/04	150.0	0.103

Mass loading limits were derived using the following equation:

Acute: (total daily flow for date, MGD)(test result, mg/L)(8.34 lbs./gallon)
Chronic: (actual monthly average flow for 10/02)(test result)(8.34)

Example mass loading based on 10/14/02 test result of 620.5 µg/L:

Acute: (0.100 MGD)(0.6205 mg/L)(8.34 lbs./gallon) = **0.517 lbs./day**

Chronic: (0.067 MGD)(0.6205 mg/L)(8.34 lbs./gallon) = **0.35 lbs./day**

Total Lead Evaluation. The 10/6/05 statistical evaluation indicates that the test results of 12.7 µg/L (5/3/01), 15.0 µg/L (1/16/04), and 32.6 µg/L (10/14/02) have a reasonable potential to exceed the chronic AWQC threshold of 11 µg/L. Acute and chronic mass-based loading limits for total lead, which are used to determine whether the discharge exceeds the AWQC, may be calculated as follows:

Acute Lead Mass Limit = $\frac{(0.11\ \text{MGD})(9.5)(10.52\ \mu\text{g/L})(8.34\ \text{lbs./gallon})}{1{,}000\ \mu\text{g/mg}}$ = **0.092 lbs./day**

Chronic Lead Mass Limit = $\frac{(0.11\ \text{MGD})(59.2)(0.4101\ \mu\text{g/L})(8.34\ \text{lbs./gallon})}{1{,}000\ \mu\text{g/mg}}$ = **0.022 lbs./day**

Example mass loading based on 10/14/02 test result of 32.6 µg/L:

(0.067 MGD)(0.0326 mg/L)(8.34 lbs./gallon) = **0.018 lbs./day**

Chapter 530.5(C)(2) states: *"where it is determined... that a discharge contains pollutants at levels that have a reasonable potential to cause or contribute to an ambient excursion in excess of a numeric or narrative water quality criterion, appropriate water quality-based limits must be established in the license upon issuance."* Department rule 06-096 CMR Chapter 530.5(C)(3) states that if *"the discharge is causing an exceedence of applicable water quality criteria, then (1) the Department must notify the licensee of the exceedence; [and] (2) the licensee must submit a toxics reduction evaluation (TRE) plan for review and approval within 30 days of notice and implement the TRE after Department approval."*

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

Working with the Department, the District began a Toxicity Reduction Evaluation (TRE) in 1996. As part of the TRE, the Limerick Water District implemented pH control of municipal water to reduce corrosion of distribution system piping. However, the most recent 60 months of effluent data indicates that the District has not resolved the elevated copper and lead levels in the discharge. Therefore, this permitting action is carrying forward the daily maximum and monthly average concentration and mass limits for total copper and the monthly average concentration and mass limits for total lead. Concentration and mass limits were derived as follows:

Total Copper Concentration and Mass Limits

EOP Concentration Threshold Formula= (Criteria)(Dilution Factor)

Acute (Daily Max.) EOP Copper Concentration Threshold = (3.89 µg/L)(9.5) = 36.9 µg/L
Chronic (Monthly Avg.) Copper Concentration Threshold = (2.99 µg/L)(59.2) = 177.0 µg/L

The USEPA's *Technical Support Document For Water Quality Based Toxics Control*, (March 1991) (TSD), Chapter 5, Section 5.7 recommends that permit limits on both mass and concentration be specified for effluents discharging into waters with less than 100 fold dilution to ensure attainment of water quality standards. So as not to penalize facilities for operating at flows less than the permitted design flow of the waste water treatment plant, the TSD recommends allowing the concentration based limits to vary in accordance with flow reductions. In addition, 40 CFR, Part 133.101(f) authorizes a permit/license writer to increase the calculated end-of-pipe (EOP) concentrations limits by a factor of 1.5 which represents effluent concentration limits that are achievable through proper operation and maintenance of the treatment plant. This factor of 1.5 is shown in the sample calculation below.

EOP Concentration Limit Formula = (Concentration Threshold)(1.5)

Daily Max. EOP Copper Concentration Limit = (36.9 µg/L)(1.5) = **55 µg/L**

Monthly Avg. EOP Copper Concentration Limit = (177.0 µg/L)(1.5) = **265 µg/L**

$$\text{Daily Max. Copper Mass Limit} = \frac{(36.9\ \mu g/L)(8.34\ \text{lbs./gallon})(0.11\ \text{MGD})}{1000\ \mu g/mg} = \textbf{0.034 lbs./day}$$

$$\text{Monthly Avg. Copper Mass Limit} = \frac{(177.0\ \mu g/L)(8.34\ \text{lbs./gallon})(0.11\ \text{MGD})}{1000\ \mu g/mg} = \textbf{0.16 lbs./day}$$

Total Lead Concentration and Mass Limits

Chronic (Monthly Avg.) Lead Concentration Threshold = (0.4101 µg/L)(59.2) = 24.3 µg/L

Monthly Average EOP Lead Concentration Limit = (24.3 µg/L)(1.5) = **36 µg/L**

$$\text{Monthly Avg. Lead Mass Limit} = \frac{(24.3\ \mu g/L)(8.34\ \text{lbs./gallon})(0.11\ \text{MGD})}{1000\ \mu g/mg} = \textbf{0.022 lbs./day}$$

6. EFFLUENT LIMITATIONS & MONITORING REQUIREMENTS (cont'd)

This permitting action is carrying forward all concentration and mass limits for total copper and total lead. Special Condition K of this permit requires the District to submit a TRE plan within 30 days of the effective date of this permit, for Department review and approval, that addresses the exceedence of the AWQC for total copper. This permitting action is revising the minimum monitoring frequency requirement for total copper. Beginning upon issuance of this permit and lasting through September 30, 2006, the permittee shall monitor for total copper at a minimum frequency of once per month (1/Month) while initiating the TRE plan. Beginning October 1, 2006 and lasting through permit expiration, the permittee shall monitor for total copper once per calendar quarter (1/Quarter). The Department reserves the right to reopen this permit in accordance with Special Condition L to modify monitoring frequencies based on the monitoring results or conclusions of the TRE plan. This permitting action is revising the minimum monitoring frequency requirement for total lead from once per year to once per calendar quarter (1/Quarter) based on a Department best professional judgment determination of the appropriate level of monitoring in consideration of the continuing reasonable potential to exceed the AWQC for lead. This permitting action is carrying forward a "grab" sample type for copper and lead through March 31, 2006 to provide the District with a reasonable opportunity to install the necessary sampling equipment to collect 24-hour composite samples. Beginning on April 1, 2006 and lasting through permit expiration, this permit requires the collection of "24-hour composite samples" for copper and lead.

Total Zinc Evaluation. The 10/6/05 statistical evaluation indicates that the test result of 150 µg/L (4/21/03) has a reasonable potential to exceed the acute AWQC threshold of 149.5 µg/L. However, the difference of 0.5 µg/L may be the result of mathematical rounding. Further, the District has since conducted a total of six subsequent tests for zinc, including a test on a sample collected two days after the 4/21/03 result of 150 µg/L, which indicate that effluent zinc levels are consistently below the acute RP concentration threshold. The Department is making a best professional judgment determination to monitor the effluent zinc levels through priority pollutant testing rather than establishing numeric limits for zinc.

7. DISCHARGE IMPACT ON RECEIVING WATER QUALITY

As permitted, the Department has determined the existing water uses will be maintained and protected and the discharge will not cause or contribute to the failure of Little Ossipee River to meet standards for Class B classification.

8. PUBLIC COMMENTS

Public notice of this application was made in the *Sanford Journal Tribune* newspaper on or about April 6, 2005. The Department receives public comments on an application until the date a final agency action is taken on the application. Those persons receiving copies of draft permits shall have at least 30 days in which to submit comments on the draft or to request a public hearing, pursuant to Chapter 522 of the Department's rules.

9. DEPARTMENT CONTACTS

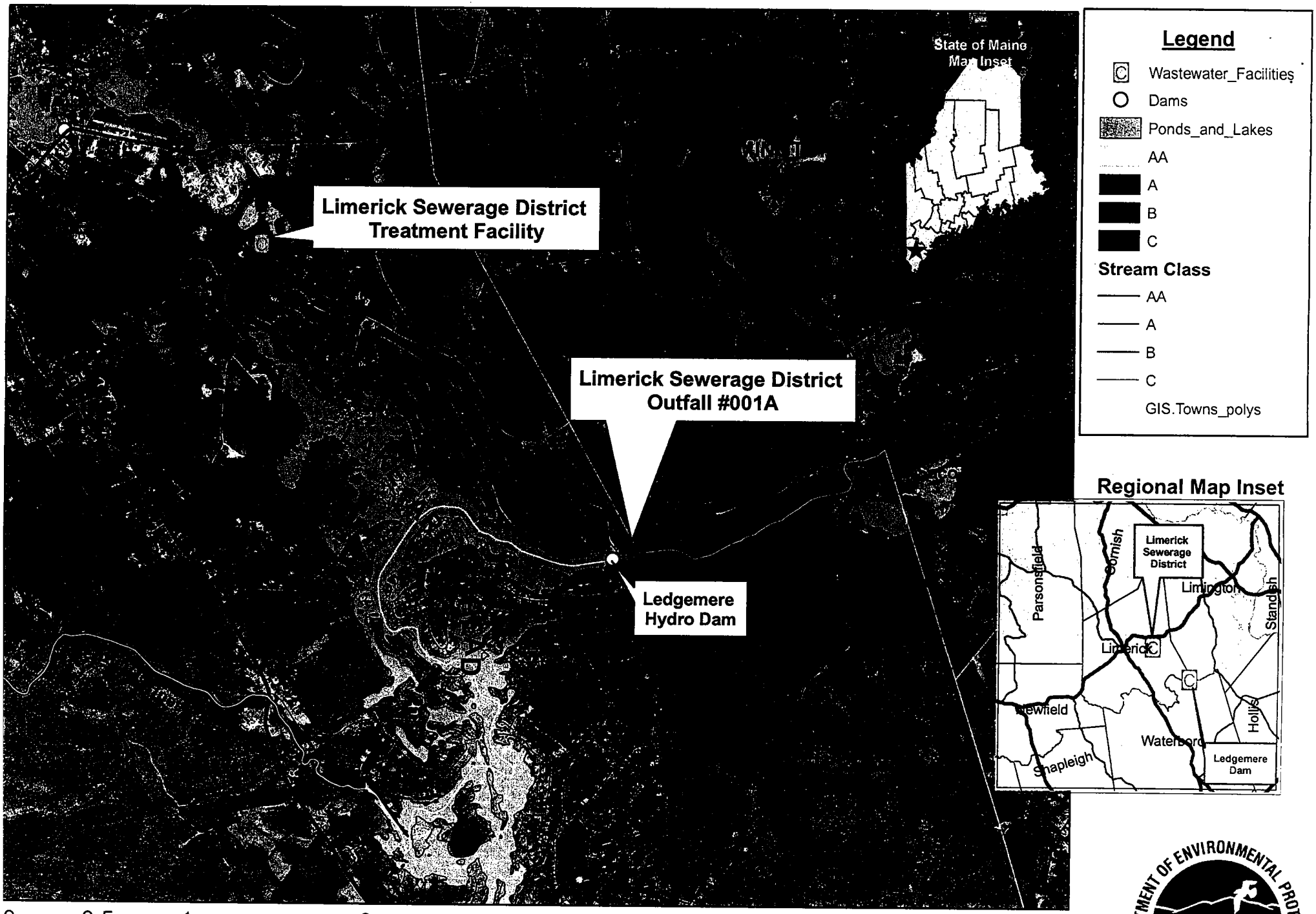
Additional information concerning this permitting action may be obtained from, and written comments sent to:

William F. Hinkel
Division of Water Resource Regulation
Bureau of Land & Water Quality
Department of Environmental Protection
17 State House Station
Augusta, Maine 04333-0017 Telephone: (207) 287-7659

10. RESPONSE TO COMMENTS

During the period of August 17, 2005 through September 19, 2005, the Department solicited comments on the proposed draft Maine Pollutant Discharge Elimination System Permit to be issued to the District for the proposed discharge. The Department received no significant comments on the proposed draft permit during the public comment period. Therefore, a response to comments was not prepared.

ATTACHMENT A

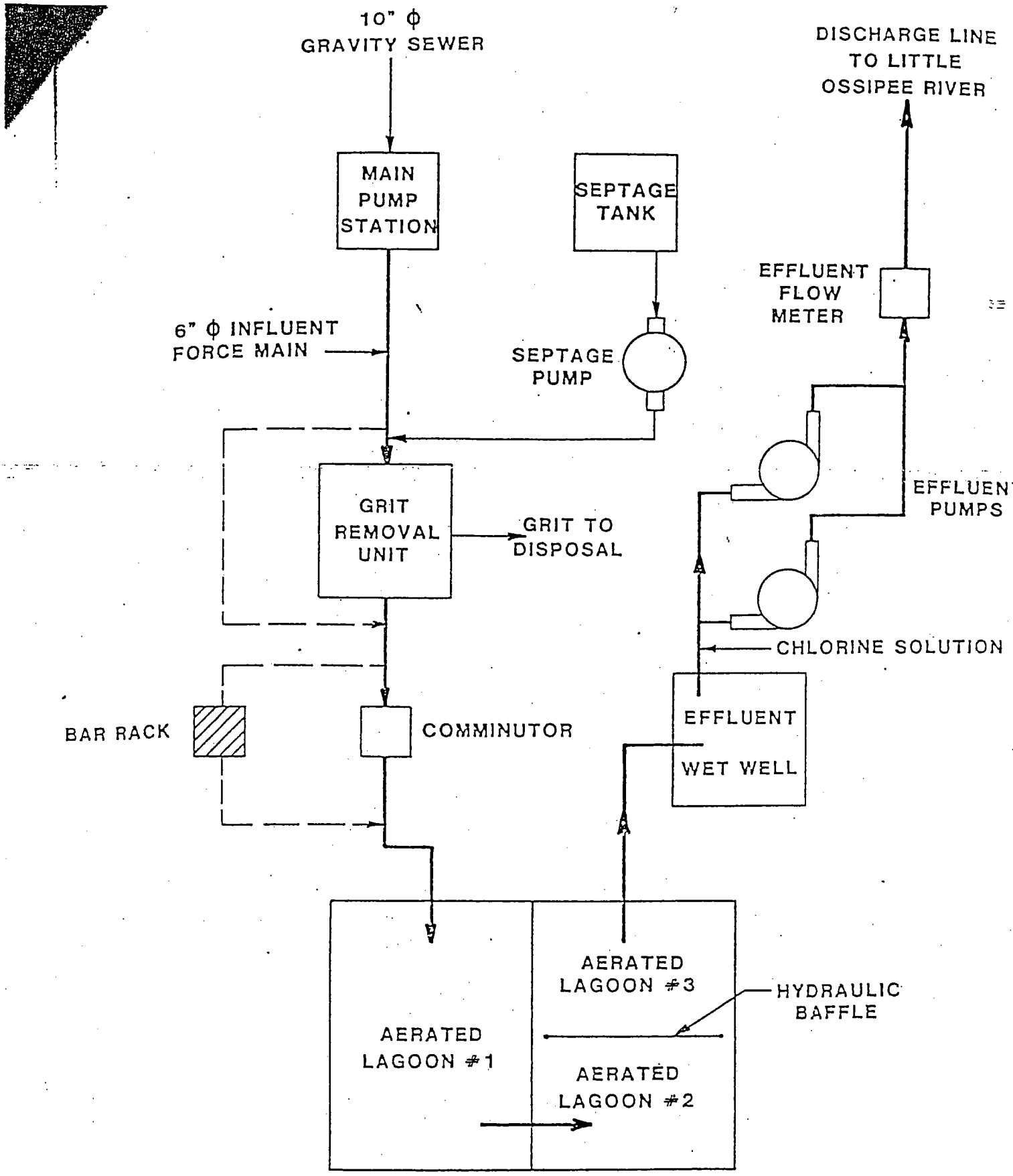


Limerick, Maine

Map created by Bill Hinkel
Division of Water Resource Regulation
Maine Department of Environmental Protection
October 7, 2005

DEPARTMENT OF ENVIRONMENTAL PROTECTION
STATE OF MAINE

ATTACHMENT B



LIMERICK SEWERAGE DISTRICT

PLANT FLOW SCHEMATIC

FIGURE NO. 2

ATTACHMENT C

	Species	Test	Test Result %	Sample Date
	TROUT	A_NOEL	100	04/02/2000
	TROUT	LC50	>100.0	04/02/2000
	TROUT	LC50	>100	04/02/2000
	WATER FLEA	A_NOEL	100.0	04/02/2000
	WATER FLEA	A_NOEL	100	04/02/2000
	WATER FLEA	C_NOEL	100.0	04/02/2000
	WATER FLEA	C_NOEL	100	04/02/2000
	WATER FLEA	LC50	>100.0	04/02/2000
	WATER FLEA	LC50	>100	04/02/2000
	TROUT	A_NOEL	>100.0	05/03/2001
(1)	TROUT	C_NOEL	>100.0	05/03/2001
	TROUT	LC50	>100.0	05/03/2001
	WATER FLEA	A_NOEL	79.6	05/03/2001
(1)	WATER FLEA	C_NOEL	6.25	05/03/2001
	WATER FLEA	LC50	>100.0	05/03/2001
	WATER FLEA	A_NOEL	100.0	10/19/2001
(2)	WATER FLEA	C_NOEL	100.0	10/19/2001
	WATER FLEA	LC50	>100.0	10/19/2001
	TROUT	A_NOEL	>100	04/15/2002
(1)	TROUT	C_NOEL	50	04/15/2002
	TROUT	LC50	>100	04/15/2002
	WATER FLEA	A_NOEL	100	04/15/2002
(1)	WATER FLEA	C_NOEL	100	04/15/2002
	WATER FLEA	LC50	>100	04/15/2002
	WATER FLEA	A_NOEL	>100.0	10/14/2002
	WATER FLEA	C_NOEL	25.0	10/14/2002
(2)	WATER FLEA	LC50	>100.0	10/14/2002
	TROUT	A_NOEL	>100.0	04/21/2003
(1)	TROUT	C_NOEL	50.0	04/21/2003
	TROUT	LC50	>100.0	04/21/2003
	WATER FLEA	A_NOEL	100.0	04/21/2003
(1)	WATER FLEA	C_NOEL	50.0	04/21/2003
	WATER FLEA	LC50	>100.0	04/21/2003
	WATER FLEA	A_NOEL	100	10/22/2003
(2)	WATER FLEA	C_NOEL	25	10/22/2003
	WATER FLEA	LC50	>100	10/22/2003
	TROUT	A_NOEL	7.47	03/22/2004
(1)	TROUT	C_NOEL	2.8	03/22/2004
	TROUT	LC50	13.4	03/22/2004
	FATHEAD	A_NOEL	>100	09/27/2004
	FATHEAD	C_NOEL	100	09/27/2004
	FATHEAD	LC50	>100	09/27/2004

> 60 MONTHS

'04 FLEA BEING RETESTED

Species	Test	Test Result %	Sample Date
WATER FLEA	A_NOEL	>100	09/27/2004
WATER FLEA	C_NOEL	12.5	09/27/2004
WATER FLEA	LC50	>100	09/27/2004